

Personal Safety and Protective Clothing-

Modified by Bruce Williams for Kenya 2011

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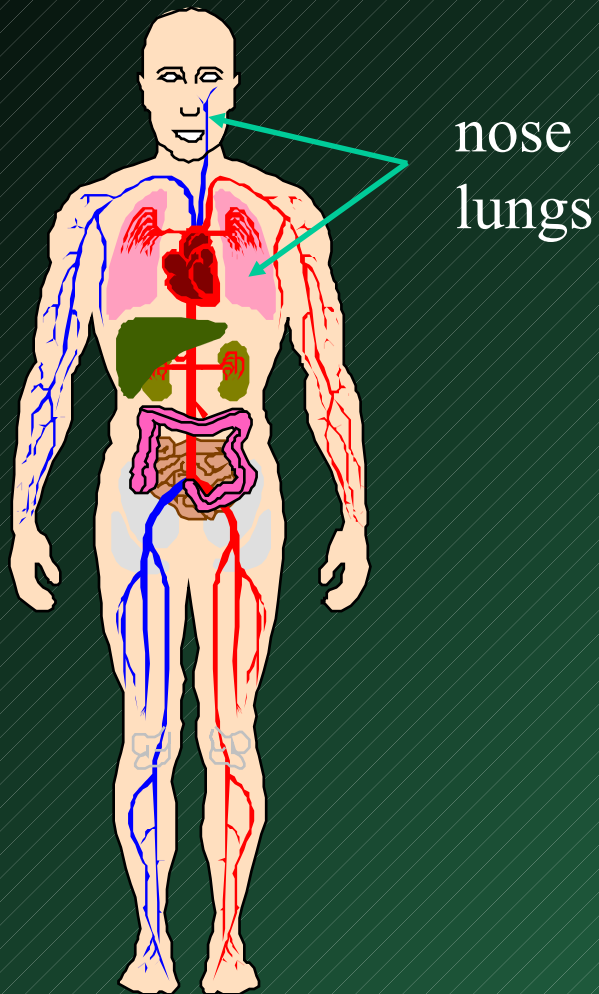


Types of Toxicity to Pesticides

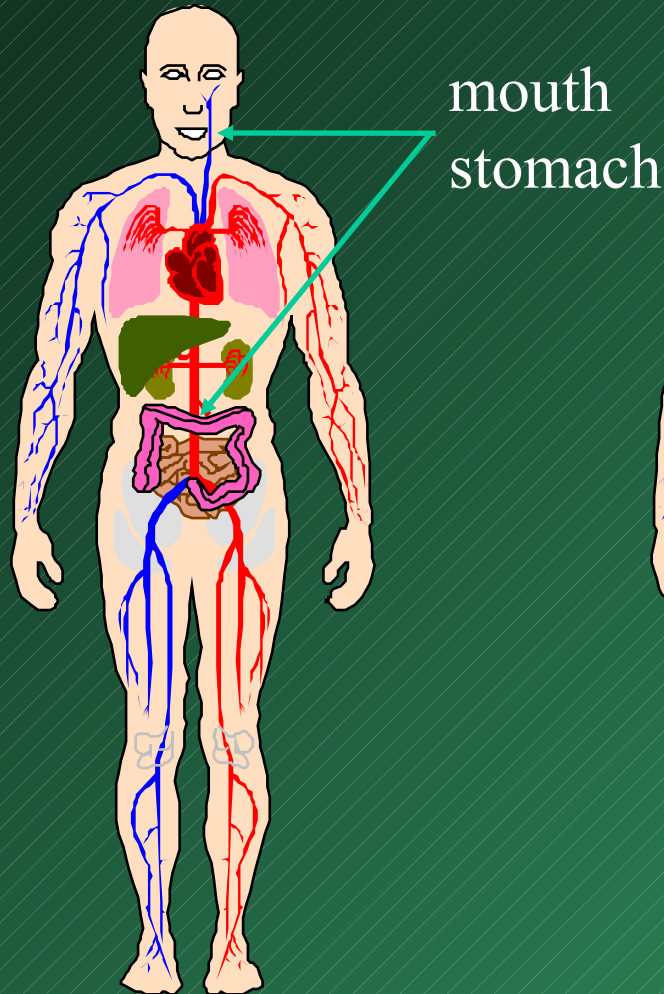
- Acute: adverse effects following a brief exposure (i.e., minutes or hours) to a pesticide; symptoms are usually obvious and reversible
- Chronic: adverse effects following prolonged exposure (i.e., weeks or years) to a pesticide; usually results from repeated doses of the pesticide
- Allergic: immune system response to pesticides; permanent and worsens with recurrent exposures; allergy can extend to similar substances; can be fatal

Routes of Exposure to Pesticides

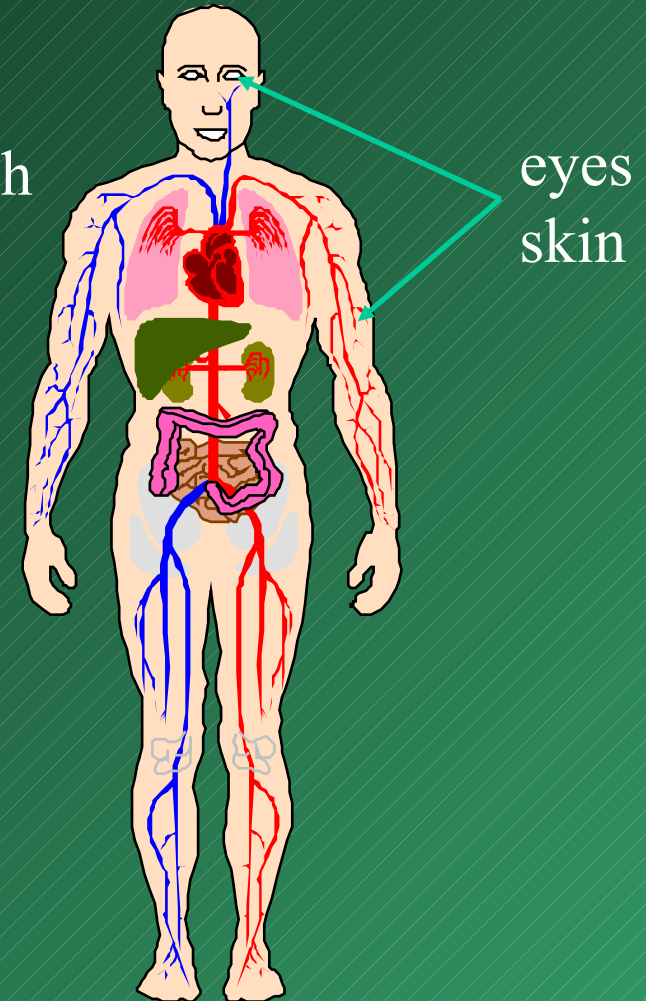
Inhalation



Oral



Dermal



03/06/11

Graphics from Greg Cope, Dept. of Toxicology, NC State University.

Means of Exposure to Pesticides

- Inhalation (nose and lungs): breathing dusts and vapors of pesticides
- Oral (mouth and stomach): eating, drinking or smoking with unwashed hands after handling pesticides; eating unwashed foods containing pesticide residues
- Dermal (eyes and skin): pesticide spills and splashes, open cuts in skin, inadequate protective clothing when applying pesticides

Effects of Acute Toxicity to Pesticides

- Inhalation (nose and lungs): pain or tightness in the chest
- Oral (mouth and stomach): burning in mouth, sore throat, upset stomach
- Dermal (eyes): irritation, temporary or permanent blindness
- Dermal (skin): itching, blisters, rash

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Symptoms of Acute Toxicity to Pesticides

- Blurred vision
- Diarrhea
- Dizziness
- Excessive sweating
- Fatigue
- Headache
- Vomiting
- Stomach cramps



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Effects of Chronic Toxicity to Pesticides

- Tumors
- Genetic effects
- Miscarriages
- Impotence
- Birth defects
- Infertility
- Sterility
- Nervous system disorders

These effects may result from a single pesticide exposure that does not become apparent until much later; or from repeated exposures to pesticides over a long period of time.

Allergic Reactions to Pesticides

- Systemic: asthma, shock
- Skin irritation: rashes, blisters, sores
- Eyes and nose: itchy and watery eyes, sneezing

Emergency Response to Pesticide Poisonings

- Administer first aid
- Call physician or go to a hospital
- Take pesticide label or container with you
- Call a poison control center (Carolinas Poison Center at 1-800-848-6946 or 1-800-84-TOXIN)



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First Aid for Pesticide Poisoning

Dermal Exposure (Skin)

- Drench skin with water
- Remove contaminated clothes
- Wash body with mild soap and water
- Do not allow victim to chill or overheat
- Apply loose, clean and dry covering to burns
- Do not apply ointments unless prescribed by physician

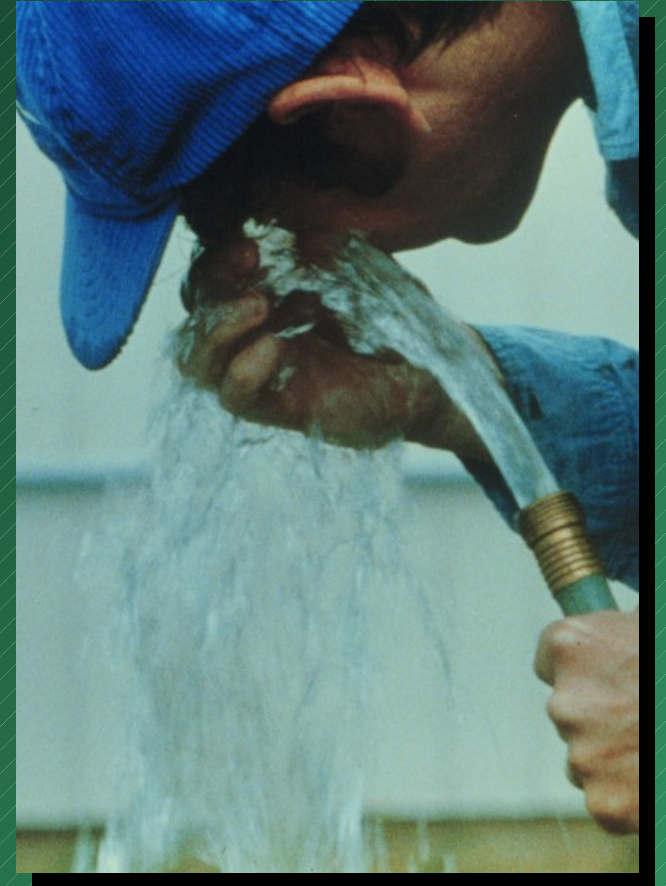


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First Aid for Pesticide Poisoning

Dermal Exposure (Eyes)

- Wash eyes quickly, but gently with water or commercial eye wash
- Rinse eyes with cool, clean water for 15 or more minutes
- Do not use chemicals or drugs in rinse water



First Aid for Pesticide Poisoning

Oral Exposure

- Rinse mouth with plenty of water
- Drink water or milk (up to one quart)
- Induce vomiting only if instructed to do so by the product label



First Aid for Pesticide Poisoning

Inhalation Exposure

- Get victim to fresh air immediately
- Loosen tight clothing on victim that might constrict breathing
- Apply artificial respiration if victim has stopped breathing



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Personal Protective Equipment (PPE)

Minimum Body Protection

- Long-sleeved shirt
- Long-legged pants
- Chemical resistant boots
- Chemical resistant gloves
- Wide brimmed hard hat
- Eye goggles (if needed)
- Chemical resistant apron (when mixing and loading)



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Personal Protective Equipment (PPE)

Types of Protective Clothing

Chemical Resistant:

- Rubber
- Neoprene
- Plastic
- Nonwoven fabric coated with plastic or other material

Non Chemical Resistant:

- Cotton
- Leather
- Canvas

Personal Protective Equipment (PPE) Chemical Resistant Clothing

- Body suits
- Hoods
- Gloves
- Footwear
- Hats
- Aprons



Personal Protective Equipment (PPE)

Chemical Resistant Clothing

- Need the maximum protection when mixing and loading pesticides, handling concentrated chemical

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Personal Protective Equipment (PPE)

Reusable Protective Clothing

- Chemical resistant, can be cleaned and reused
- Suits, hoods, gloves, boots: rubber or plastic; inspect thoroughly before each use
- Fabric coveralls: do not clean and reuse if contaminated with concentrated pesticide
- Eyewear, respirators, helmets: can be cleaned and reused



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Personal Protective Equipment (PPE)

Disposable Protective Clothing

- Chemical resistant, but can not be cleaned of pesticide
- Nonwoven fabric coated with plastic
- Suits, hoods and footwear
- Dust masks and some respirators



Personal Protective Equipment (PPE)

Types of Respirators

- Air-supplying respirators: supply user with clean, uncontaminated air from independent source; use if oxygen supply is low or fumigating enclosed areas
- Air-purifying respirators: include dust masks, devices containing a body and cartridges with air-purifying materials, and devices containing a body and canister with air-purifying material (gas masks)



Personal Protective Equipment (PPE)

Air-Purifying Respirators

- Fit test: perform before first use of a respirator
- Fit check: perform before each use of the respirator
- Wash respirator after each use
- Store clean and dry



Personal Protective Equipment (PPE)

Handling Fumigants

- Small amounts of fumigants can be fatal (they are extremely toxic gases)
- Must wear the proper respirator for the fumigant you are applying
- Should wear the respirator during all exposures (i.e., applying chemical, removing tarp, etc.)
- Never work alone when applying fumigants
- Indoors: use an air-supplied respirator

Personal Protective Equipment (PPE)

Washing Protective Clothing

- Wash the clothes in which you apply pesticides separately from other clothing

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Personal Protective Equipment (PPE)

Washing Protective Clothing

- Wear gloves and work in well-ventilated area
- Rinse clothing (hand rinse or washing machine)
- Wash a few items at a time in washing machine
- Rinse clothes twice
- Use two entire wash cycles if necessary
- Run machine one cycle after removing clothes (to remove any pesticide residues from washer)
- DO NOT wash badly-contaminated clothing